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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,891

03/29/2006

Luciano Accatino

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22852

7590

10/26/2007

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EXAMINER

LEE, BENNY T

ART UNIT

PAPER NUMBER

2817

MAIL DATE

DELIVERY MODE

10/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/573,891

Applicant(s)

ACCATINO ET AL.

Examiner

Benny Lee

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-23, 25, 29, 30 and 32-39 is/are rejected.
- 7) ☒ Claim(s) 24, 26-28 and 31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 29 March 2006.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

The disclosure is objected to because of the following informalities: Page 1, lines 19, 33, note that a --,-- should be inserted after the respective patent number for grammatical clarity; line 28, note that --patent-- should follow “described” & --in-- should follow “filter”, respectively for grammatical clarity. Page 2, line 11, should “microstrip to stripline” be rephrased as --microstrip or stripline-- for a proper characterization?; line 13, note that “also” should be deleted as being unnecessary; line 34, note that --thereby-- should be inserted after “obtained” for grammatical clarity. Page 3, lines 21, 23, 25, 27, 32 & page 4, lines 4, 7, note that “said” should be rewritten as --the-- at each occurrence for an appropriate characterization. Page 7, line 3, note that “tuning selectively” should be rephrased as --selectively tuning-- for idiomatic clarity. Page 8, lines 13, 15, 21, 22, 25, note that --(Figure 1)-- should be inserted after “C1”, “C2”, “3” & “4”, respectively for clarity of description; lines 13, 16, 21, note that --(Figure 3)-- should be inserted after “T1” & “T2”, respectively for clarity of description. Page 9, line 18, note that “an” (i.e. prior to “yttrium”) should be rewritten as --a-- for grammatical correctness. Page 10, line 4, note that --conductive-- should be inserted prior to “structures” for an appropriate characterization; line 22, note that “region” should be rewritten as --regions-- for consistency in tense. Page 11, line 5, note that “10 ÷ 15 mm” is vague in meaning and needs clarification. Page 14, line 5, note that --of Figure 6-- should be inserted after “40” for clarity of description; line 13, note that --with respect to Figure 6-- should be inserted after “42” for clarity of description. Note that the following labeled features shown in the respective figures need to be correspondingly described relative to that drawing figures description: FIG. 2, all reference labels except “5”; FIG. 3 (2, 3, 4). Appropriate correction is required.

The drawings are objected to because of the following: In FIGS. 7, 8, 9, note that the respective parameters along the vertical axis of the corresponding graphs need to be provided for clarity of description; In FIG. 8, note that frequency parameters --f1-- & --f2-- need to be provided as per the Figure 8 description.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following claims have been found to be objectionable for reasons set forth below:

In claim 1, line 5, note that "made" should be rewritten as --disposed-- for an appropriate characterization; line 8, note that --forming-- should be rewritten as --having-- for an appropriate characterization.

In claim 21, last line, note that "their mutual coupling" should be rephrased as --mutual coupling between said resonating modes-- for an appropriate characterization.

In claims 22, 23, 32, note that "made" should be rewritten as --disposed-- at each occurrence for an appropriate characterization.

In claim 26, note that "said edges significantly rounded" should be rephrased as --said significantly rounded edges-- for an appropriate characterization.

In claim 28, note that "its major axis" should be rephrased as --the major axis thereof-- for an appropriate characterization.

In claims 38, 39, note that "made according to ..." should be rephrased for clarity.

In claim 39, note that the double recitation of the dependency from "claim 20" should be rewritten for an appropriate characterization. Also, note that in line 4, "note" should be correctly spelled as --node--.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 20-23, 25, 29, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al in view of Schallner.

Mizoguchi et al (Fig. 7) discloses a planar filter comprised of a planar resonator having a frame-shape electrode pattern (13) defined by a conductive region having sides (13a, 13b, 13c, 13d) configured in a square shape and a conductor-free region located within or internally to the sides of the frame-shape electrode pattern (13). Also, note that input & output electrodes or leads (i.e. 5, 6) provide capacitive coupling (i.e. as evident from the capacitive coupling element) to/from the frame-shape electrode pattern (13). In operation, the resonator defined by the frame-shape electrode pattern (13) functions as a dual mode band pass filter, where one mode extends in a direction between input and output electrodes (5, 6). Note that as known to those of ordinary skill in the art, the frame-shape electrode pattern (13), including the conductor free region contributes to the coupling of the second mode, which is oriented perpendicular to the conductive path of the one mode. In particular, it should be noted that the conductor-free region of the frame-shape electrode pattern has symmetry about an axis, which is aligned with the direction of the second mode and thus is oriented at an angle of 90 degrees with respect to the first conductive path. It should be noted that Mizoguchi et al differs from the claimed invention in that the square frame-shaped electrode pattern does not include smooth contours, such as claimed.

Schallner discloses a dual mode ring shape resonator (1) of a square shape configuration having rounded corners (2, 3, 4, 5) on both the outer periphery and the inner periphery (i.e.

corresponding to a conductor-free region) of the ring resonator, such as to provide a flat band pass response and the bandwidth can be easily adjusted (e.g. see column 2, lines 63-66).

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the square frame shape electrode pattern of Mizoguchi et al to have included rounded corners on both the outer & inner peripheries, such as taught by Schallner. Such a modification would have been considered obvious since it would have imparted to a like resonator from the same field of endeavor such as in Mizoguchi et al (i.e. dual mode band pass filter), the benefits of a flatter band pass and easily adjusted bandwidth afforded by using rounded corners, such as taught by Schallner, and thus would have suggested the obviousness of such a modification. Furthermore, note that since the resonators of this combination are planar, such would have obviously suggested that the capacitive coupled leads would likewise have been planar, such as to have been consistent with the planar nature of the resonator.

Claims 32-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the above rejection as applied to claim 20 above, and further in view of Mizuno et al.

The above combination meets the claimed invention except that the resonator is not disclosed as being of a superconductive material, such as claimed.

Mizuno et al exemplarily discloses that superconductive materials have been conventionally used to realize planar resonators for filters of the "dipole" or dual mode type (i.e. like that of the above combination). Note that Mizuno et al exemplarily discloses that various superconductive materials (e.g. metals such as Pb and oxides such as YBaCuO), as described at column 9, line 64 to column 10, line 4.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have realized the dual mode resonator of the combination as a superconductive material resonator. Such a modification would have been considered an obvious substitution of art recognized conductive materials usable in structures from the same field of endeavor (i.e. dual mode resonator filters), and as such would not have affected the functions of such dual mode resonators, thereby suggesting the obviousness of such a modification. It should be noted that although YBaCuO (i.e. a yttrium family) superconductive material is disclosed as the preferred material, the selection of such a material has been considered exemplary in nature, since it would have been known to those of ordinary skill in the art that other equivalent types of oxide superconductive materials (e.g. from the bismuth family, from the thallium family, etc) would have been equally usable since they would have provided the equivalent function for the dual mode resonator as the yttrium superconductive material, thereby suggesting the obviousness of such a modification..

Claims 38, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over the above rejection as applied to claim 20 above, and further in view of Abdelmonem et al.

Note that the above combination meets the claimed invention except for the claimed filter being used in a front-end of a transceiver.

Abdelmonem et al discloses in Fig. 3 thereof, a front-end system (50) for a transceiver including a receive path (52) and a transmit path (54). Note that each path connects at a node (56) to an antenna. Moreover, note that the receive path includes therein, a cryostat (64), which encloses therein a receive filter (66) and a low noise amplifier (68). Furthermore, note that the receive branch is connected at a second node (70).



Application/Control Number:  
10/573,891  
Art Unit: 2817

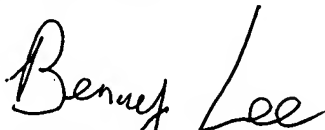
Page 8

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the generic filters of the front-end system of Abdelmonem et al by the particular dual mode resonator filters as disclosed in the above combination. Such a modification would have been considered obvious since the generic nature of the filters in the front-end system of Abdelmonem et al would have suggested that any equivalent filters (such as those taught by the combination) would have usable therewith, thereby suggesting the obviousness of such a modification.

Claims 24, 26-28, 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 571 272 1764.

B. Lee

  
BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817